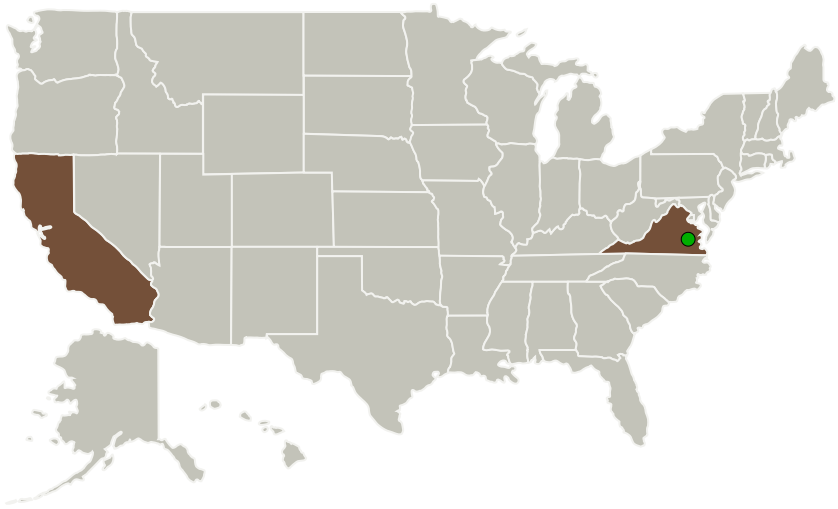
Compact High Power 3D LiDAR System for (UAS) Unmanned Aircraft Systems, Phase I

Completed Technology Project (2016 - 2016)

Project Introduction

Eotron has introduced a high performance 3D Time-of-Flight Laser illumination source based on its patented silicon packaging technology originally developed to improve power and brightness in high-power diode laser modules. Using proprietary design, fabrication and thermal management techniques, Eotron has developed a compact Laser illumination source that achieves a high pulse modulation rate and peak power output with fast rise times. This technology allows for real time 3D imaging and ranging using higher peak power and pulse rate to provide both long distance and high resolution imaging. Eotrons 3D Time-Of-Flight (TOF) technology will add new dimensions and capabilities to a seemingly endless number of applications. Whether it is for collision avoidance systems for manned or unmanned air or ground vehicles, surveillance system?s intruder detection or identification, robotic vision or artificial intelligence, all can benefit from this technology. Add to this that the technology is Wafer Scale Production ready, lowering the cost of production in volume.

Primary U.S. Work Locations and Key Partners



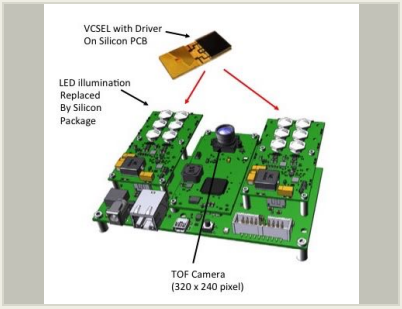


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Table of Contents

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
Eotron, LLC	Lead Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB)	Oceanside, California
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations	
California	Virginia

Project Transitions

June 2016: Project Start

December 2016: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140258)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Eotron, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

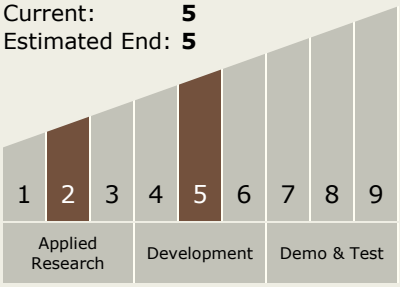
Carlos Torrez

Principal Investigator:

Gerald H Kim

Technology Maturity (TRL)

Start: **2**
Current: **5**
Estimated End: **5**



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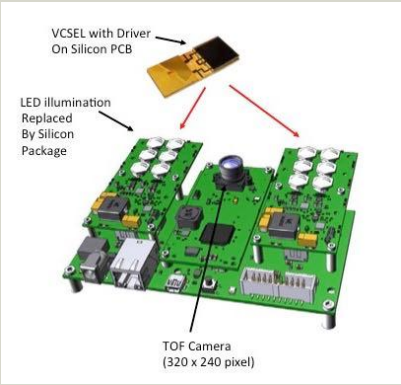
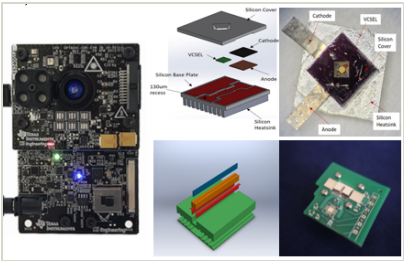
Images



Briefing Chart Image
Compact High Power 3D LiDAR System for (UAS) Unmanned Aircraft Systems, Phase I
(https://techport.nasa.gov/image/127493)



Final Summary Chart Image
Compact High Power 3D LiDAR System for (UAS) Unmanned Aircraft Systems, Phase I Project Image
(https://techport.nasa.gov/image/131102)

Technology Areas

Primary:

- TX04 Robotic Systems
  - TX04.1 Sensing and Perception
    - TX04.1.2 State Estimation

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System